October 1st, 2014.

Inventory Analysis Exercise Directions

Your air travel company offers two air travel services by airplane and by sphere to destinations all over the globe. Your customers want to make more sustainable travel choices to minimize their *time* impact. Keen to help them, your company decides to carry out a cradle-to-grave life cycle inventory (LCI) study to determine the time needed to provide each travel service option. Carry out the following directions with your air travel company team members.

1. Come up with a name for your air travel company and define Goal parameters for your company's LCI study.
    a. Intended application? _____
    b. Reason for carrying out the study? _____
    c. Intended audience? _____
    d. Intended for comparative assertions? _____
2. Read the directions for the Unit Processes on the *data collection sheet* provided.
3. Create a process flow diagram that illustrates the structure and relationship between the Airplane and Sphere product systems. Include unit processes as boxes, products/co-product flows with arrows to indicate the direction of their product flows, and the system boundary as a dashed line.
    a. What is an appropriate functional unit of the product system supported by your air travel company's services? _____
4. Assign one group member as the Timer and assign the rest of the life cycle modules to the other group members.
5. Starting from Raw Material Acquisition Stage – the Timer begins timing their group members in sequence as they carry out the respective Unit Process directions, from Raw Material Acquisition to End-of-Life Stage. The Timer records the times for the respective Unit Processes in the *data collection sheet* provided. NOTE: This also includes recording distance travelled in the Use stage.
6. Once all stages are complete. Identify where inventory flows share Unit Processes, and apply a mass allocation procedure to the shared inventory flows in the Sphere and Airplane Product Systems. Assume your extracted piece of paper weighs 1kg, and make note of the allocation factors used.
7. Relate inventory flows using your functional unit and record your final allocated and functional unit related inventory analysis results in the final columns of your data processing sheet.
8. Aggregated (ie. sum) the inventory results for each life cycle module and for your Airplane and Sphere product systems.